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Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Amendment of Parts 2 and 15	)	
of the Commission's Rules to Permit	)	ET Docket No. 94-124
Use of Radio Frequencies Above 40 GHz	)	RM-8308
for New Radio Applications	)	

To: The Commission

COMMENTS OF METRICOM, INC.

Metricom, Inc. ("Metricom"), by its attorneys, hereby submits these comments in response to the Commission's Notice of Proposed Rule Making, released in the above-captioned proceeding on November 8, 1994 (the "Notice"), concerning the opening of a portion of the millimeter wave frequency bands above 40 GHz for commercial development and use. Metricom applauds the Commission for proposing to allocate a substantial portion of the spectrum for unlicensed operations. Metricom urges the Commission to adopt a very flexible approach as it develops technical standards for millimeter wave frequency band equipment and operation; flexibility will promote and assure the most efficient and effective use of the spectrum for unlicensed operations.

1. Metricom is a young, rapidly growing, technologically innovative company based in Silicon Valley. In accordance with the encouragement of the Commission in various Part 15 proceedings, Metricom was a pioneer in the development of spread spectrum

systems, and it has invested significant sums of money, time and energy to develop, manufacture and market sophisticated RF devices which operate on an unlicensed basis pursuant to Part 15 of the Commission's Rules. Through the application of innovative technology, as encouraged by the Commission, Metricom's Part 15 devices offer a unique license-free wireless solution providing cost-effective, intelligent and flexible local and wide area data communications for a variety of important applications in the public interest.

2. Metricom endorses the Commission's proposal in this proceeding to allocate spectrum for unlicensed operations. The Commission has consistently recognized the important benefits and contributions of unlicensed operations, and it is important that the Commission continue to recognize these contributions in all new frequency allocations. Part 15 devices have demonstrated new, innovative and cost-effective operations. Part 15 cost-effective operations, coupled with the ease of use and deployment of Part 15 devices, have made unlicensed products and services extremely popular with the American public.

3. While the Commission is to be applauded for proposing to make a spectrum allocation for unlicensed operations above 40 GHz, there are some problems inherent with the Commission's proposal. On the one hand, the Commission recognizes the important contribution of unlicensed services and indicates its desire to

have those services continue to develop and provide public interest benefits. On the other hand, however, the Commission nearly trivializes unlicensed services by making the largest unlicensed bandwidth allocation at 59-64 GHz, a band that admittedly provides the poorest propagation of all the spectrum being allocated in this proceeding.[1/] It appears, therefore, that unlicensed operations will have a more difficult time than licensed operations in attempting to develop equipment and services.

4. Moreover, as the Commission is aware, RF data transmission systems above 40 GHz will have need extremely high speed data transmission if these systems are to have any hope of matching the capacity and transmission speeds of coaxial cable and fiber-optic systems. The only way such high speed RF transmission can be assured is to provide sufficient bandwidth for these systems. Unfortunately, the proposed allocation for unlicensed operations does not provide sufficient bandwidth. As discussed above, the 59-64 GHz band provides extremely poor propagation. Although an additional 3.5 GHz is proposed in other bands, 71.5-72 GHz, 84.5-85 GHz, 103.5-104 GHz, 116.5-117 GHz, 122.5-123 GHz, 126.5-127 GHz, and 152.5-153 GHz, this allocation consists of relatively narrow bandwidths which will be inadequate to provide the high speed RF transmissions necessary to match coaxial cable or fiber. Therefore, the Commission must make at least one additional

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[1/] This poor propagation is due to oxygen absorption of the RF signals.

5 GHz allocation available for unlicensed operations, either through a single allocation, or through a mechanism whereby several narrower allocations could be aggregated.

5. Turning to the issue of technical and operational regulations above 40 GHz, because there are so many "unknowns" about operations in the band, it is extremely important that the Commission adopt a flexible regulatory approach. A flexible approach will both encourage and promote the most efficient operations in the band, while at the same time provide the requisite protection from harmful interference. Accordingly, only very broad and general rules should be adopted; then, as products and services begin to develop, the Commission can further refine the rules. Adopting rigid rules at this time will only serve to inhibit the development of equipment and services. Furthermore, once equipment and services begin to develop in the unlicensed bands, the Commission must assure that it continues to encourage the development of unlicensed services and that it will not consider allocating the spectrum for other uses. Absent these assurances, there will be hesitation on the part of equipment manufacturers to even consider developing equipment for unlicensed operations above 40 GHz.

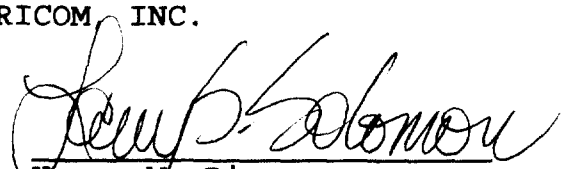
6. The Notice also raises the issue of permissible power. Power limits for unlicensed operations are necessary (in addition to RF radiation exposure limits) to assure that unlicensed

facilities will not interfere with licensed facilities. While Metricom would not be opposed to RF output power limits, it urges the Commission not to place EIRP limits on unlicensed devices. Because RF transmissions above 40 GHz are necessarily short range and directionalized, experimentation with high gain antennas could yield favorable and beneficial results. If the Commission places EIRP limits on unlicensed devices, such experimentation will not be possible, and potential benefits will not be realized.

WHEREFORE, the premises considered, Metricom submits these Comments and urges the Commission to take action consistent with the views expressed herein.

Respectfully submitted,

METRICOM, INC.

By: 

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